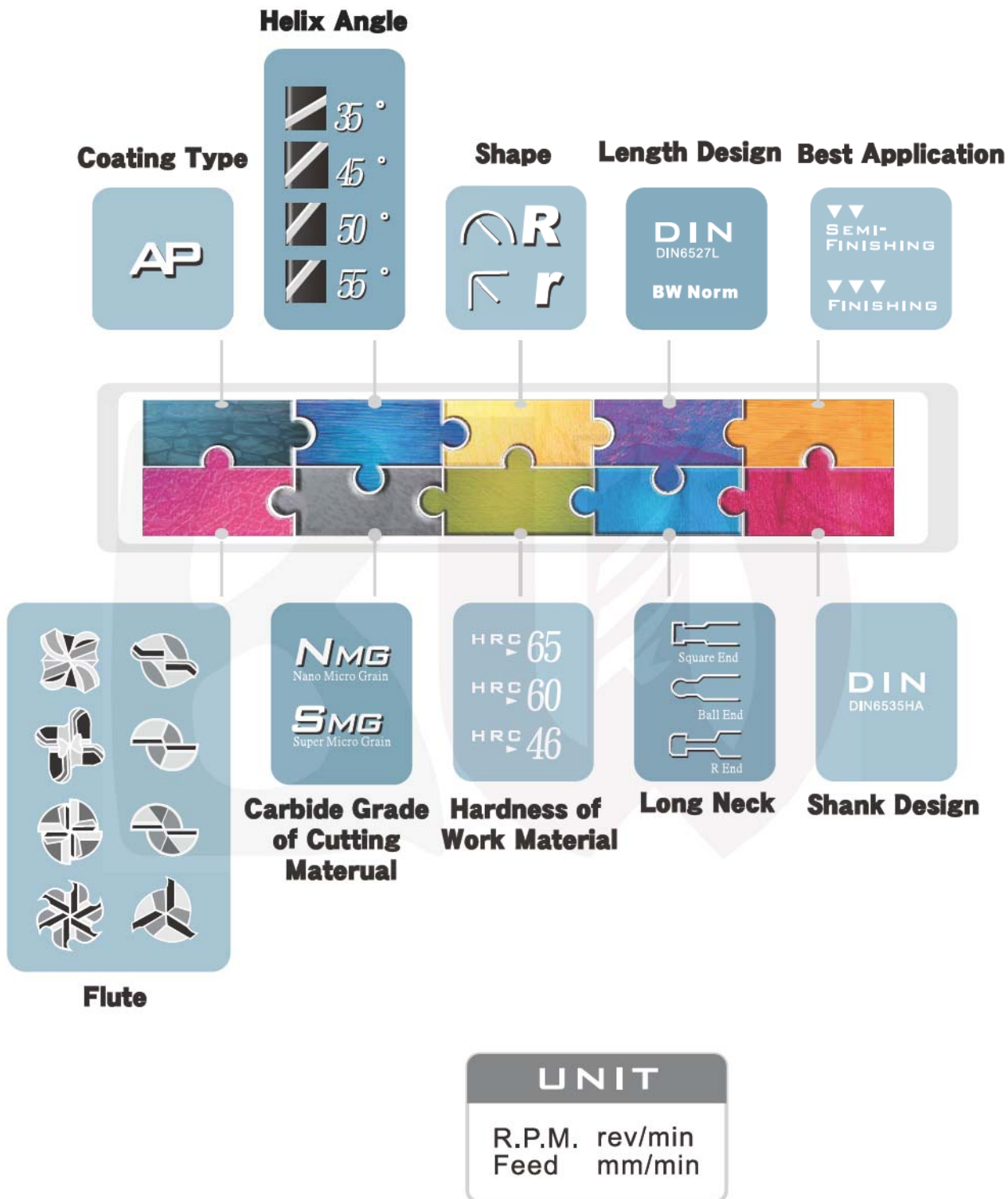


Description Of The Icon



SOLID CARBIDE END MILLS



Solid Carbide Long Neck End Mills

錫鋼深溝用立銑刀

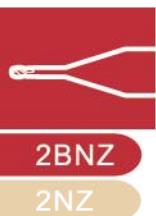
BW

SOLID CARBIDE END MILLS

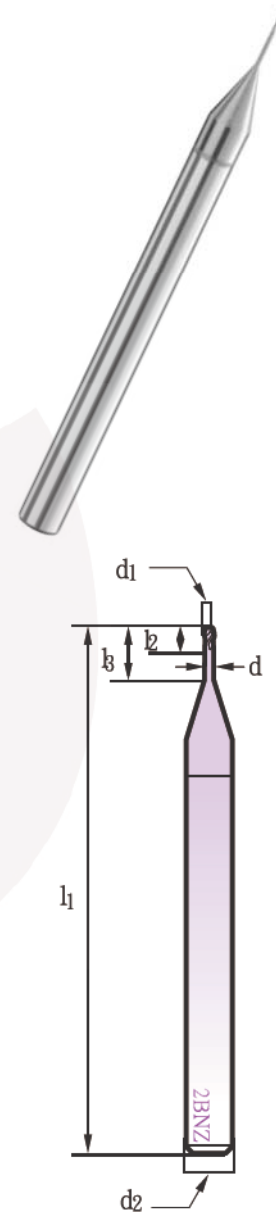
P1 - 2BNZ**P3 - 2NZ****End Mill****NMG****Nano Micro Grain Solid Carbide****Super Micro Grain Solid Carbide****SMG****P5 - 2BNW****P7 - 2NTW****P8 - 2BCKN****P9 - 4NT**

NMG Long Neck Ball Nose End Mills

奈米微粒深溝用圓頭立銑刀



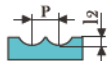
Order Code	$\varnothing d_1$ (e8)	l_2	l_3	l_1	$\varnothing d_3$	$\varnothing d_2$ (h6)
2BNZ0504	R0.25	1.0	4	50	0.47	6.0
2BNZ0506	R0.25	1.0	6	50	0.47	6.0
2BNZ0604	R0.3	1.2	4	50	0.57	6.0
2BNZ0606	R0.3	1.2	6	50	0.57	6.0
2BNZ0806	R0.4	1.2	6	50	0.77	6.0
2BNZ0808	R0.4	1.2	8	50	0.77	6.0
2BNZ1006	R0.5	1.5	6	50	0.97	6.0
2BNZ1008	R0.5	1.5	8	50	0.97	6.0
2BNZ1010	R0.5	1.5	10	50	0.97	6.0
2BNZ1012	R0.5	1.5	12	50	0.97	6.0
2BNZ1208	R0.6	2.0	8	50	1.17	6.0
2BNZ1212	R0.6	2.0	12	50	1.17	6.0
2BNZ1508	R0.75	2.0	8	50	1.47	6.0
2BNZ1512	R0.75	2.0	12	50	1.47	6.0
2BNZ1516	R0.75	2.0	16	50	1.47	6.0
2BNZ1520	R0.75	2.0	20	50	1.47	6.0
2BNZ1608	R0.8	2.5	8	50	1.57	6.0
2BNZ1612	R0.8	2.5	12	50	1.57	6.0
2BNZ1616	R0.8	2.5	16	50	1.57	6.0
2BNZ2008	R1	3.0	8	50	1.95	6.0
2BNZ2012	R1	3.0	12	50	1.95	6.0
2BNZ2016	R1	3.0	16	50	1.95	6.0
2BNZ2020	R1	3.0	20	50	1.95	6.0
2BNZ3008	R1.5	4.0	8	50	2.90	6.0
2BNZ3012	R1.5	4.0	12	50	2.90	6.0
2BNZ3016	R1.5	4.0	16	50	2.90	6.0
2BNZ3020	R1.5	4.0	20	75	2.90	6.0
2BNZ3025	R1.5	4.0	25	75	2.90	6.0
2BNZ4010	R2	5.0	10	75	3.90	6.0
2BNZ4015	R2	5.0	15	75	3.90	6.0
2BNZ4020	R2	5.0	20	75	3.90	6.0
2BNZ4025	R2	5.0	25	75	3.90	6.0
2BNZ4030	R2	5.0	30	75	3.90	6.0



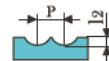
2BNZ Recommendations for Cutting Conditions

WORK Material	S45C,P20S,PCD		SUS403,SKD11,SCr		Ti-6Al-4V PRE/HARDENED STEELS	
	<HRC30		<HRC30-45		<HRC45-65	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2BNZ0504	34500	2130	32500	2060	30500	2000
2BNZ0506	34500	2130	32500	2060	30500	2000
2BNZ0604	34500	1630	32500	1560	30500	1500
2BNZ0606	34500	1630	32500	1560	30500	1500
2BNZ0806	34000	1130	32000	1060	30000	1000
2BNZ0808	34000	1130	32000	1060	30000	1000
2BNZ1006	34000	1360	32000	1280	30000	1200
2BNZ1008	34000	1360	32000	1280	30000	1200
2BNZ1010	34000	1360	32000	1280	30000	1200
2BNZ1012	34000	1360	32000	1280	30000	1200
2BNZ1208	34000	1580	32000	1500	30000	1400
2BNZ1212	34000	1580	32000	1500	30000	1400
2BNZ1508	34000	1700	32000	1600	30000	1500
2BNZ1512	34000	1700	32000	1600	30000	1500
2BNZ1516	34000	1700	32000	1600	30000	1500
2BNZ1520	34000	1700	32000	1600	30000	1500
2BNZ1608	28000	2100	26000	1950	24000	1800
2BNZ1612	28000	2100	26000	1950	24000	1800
2BNZ1616	28000	2100	26000	1950	24000	1800
2BNZ2008	28000	2330	26000	2160	24000	2000
2BNZ2012	28000	2330	26000	2160	24000	2000
2BNZ2016	28000	2330	26000	2160	24000	2000
2BNZ2020	28000	2330	26000	2160	24000	2000
2BNZ3008	28000	2910	26000	2700	24000	2500
2BNZ3010	28000	2910	26000	2700	24000	2500
2BNZ3016	28000	2910	26000	2700	24000	2500
2BNZ3020	28000	2910	26000	2700	24000	2500
2BNZ3025	28000	2910	26000	2700	24000	2500
2BNZ4010	24000	3600	22000	3300	20000	3000
2BNZ4015	24000	3600	22000	3300	20000	3000
2BNZ4020	24000	3600	22000	3300	20000	3000
2BNZ4025	24000	3600	22000	3300	20000	3000
2BNZ4030	24000	3600	22000	3300	20000	3000

Max
Milling
Volume



$I_2 < 0.02R$
 $P < 0.02R$



$I_2 < 0.01R$
 $P < 0.025R$



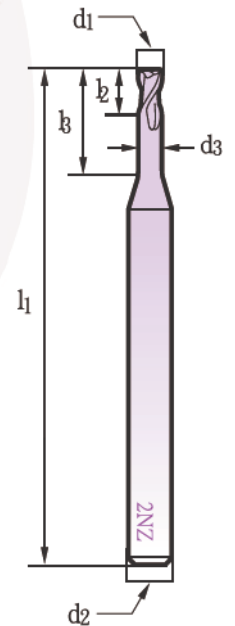
2BNZ

2NZ



NMG Long Neck End Mills

奈米微粒深溝用立銑刀



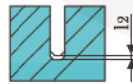
Order Code	$\varnothing d_1$ (^{h6})	l_2	l_3	l_1	$\varnothing d_3$	$\varnothing d_2$ (^{h6})
2NZ0502	0.5	1.0	2	50	0.47	6.0
2NZ0504	0.5	1.0	4	50	0.47	6.0
2NZ0506	0.5	1.0	6	50	0.47	6.0
2NZ1004	1.0	1.5	4	50	0.97	6.0
2NZ1006	1.0	1.5	6	50	0.97	6.0
2NZ1008	1.0	1.5	8	50	0.97	6.0
2NZ1010	1.0	1.5	10	50	0.97	6.0
2NZ1012	1.0	1.5	12	50	0.97	6.0
2NZ1504	1.5	2.0	4	50	1.47	6.0
2NZ1508	1.5	2.0	8	50	1.47	6.0
2NZ1510	1.5	2.0	10	50	1.47	6.0
2NZ1512	1.5	2.0	12	50	1.47	6.0
2NZ1516	1.5	2.0	16	50	1.47	6.0
2NZ2010	2.0	3.0	10	50	1.95	6.0
2NZ2012	2.0	3.0	12	50	1.95	6.0
2NZ2016	2.0	3.0	16	50	1.95	6.0
2NZ2020	2.0	3.0	20	50	1.95	6.0
2NZ2510	2.5	3.0	10	50	2.45	6.0
2NZ2512	2.5	3.0	12	50	2.45	6.0
2NZ2516	2.5	3.0	16	50	2.45	6.0
2NZ2520	2.5	3.0	20	50	2.45	6.0
2NZ3010	3.0	4.0	10	50	2.90	6.0
2NZ3012	3.0	4.0	12	50	2.90	6.0
2NZ3016	3.0	4.0	16	50	2.90	6.0
2NZ3020	3.0	4.0	20	50	2.90	6.0
2NZ4010	4.0	4.0	10	50	3.90	6.0
2NZ4016	4.0	4.0	16	50	3.90	6.0
2NZ4020	4.0	4.0	20	50	3.90	6.0



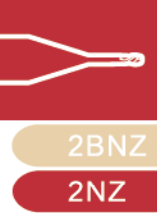
2NZ Recommendations for Cutting Conditions

WORK Material	S45C,P20S,PCD		SUS403,SKD11,SCr		Ti-6Al-4V PRE/HARDENED STEELS	
	<HRC30		<HRC30-45		<HRC45-65	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2NZ0502	34500	2130	32500	2060	30500	2000
2NZ0504	34500	2130	32500	2060	30500	2000
2NZ0506	34500	1630	32500	1560	30500	1500
2NZ1004	34500	1630	32500	1560	30500	1500
2NZ1006	32000	1230	31000	1190	30000	1150
2NZ1008	32000	1230	31000	1190	30000	1150
2NZ1010	31000	1190	30000	1150	29000	1110
2NZ1012	31000	1190	30000	1150	29000	1110
2NZ1504	31000	2050	30000	2000	28000	1800
2NZ1508	31000	2050	30000	2000	28000	1800
2NZ1510	29000	1870	28000	1800	27000	1750
2NZ1512	29000	1870	28000	1800	27000	1750
2NZ1516	29000	1870	28000	1800	27000	1750
2NZ2010	29000	2230	28000	2150	26000	2000
2NZ2012	29000	2230	28000	2150	26000	2000
2NZ2016	27000	2050	26000	2050	25000	1920
2NZ2020	27000	2050	26000	2050	25000	1920
2NZ2510	29000	2680	28000	2590	26000	2400
2NZ2512	29000	2680	28000	2590	26000	2400
2NZ2516	27000	2500	26000	2400	25000	2310
2NZ2520	27000	2500	26000	2400	25000	2310
2NZ3010	26000	3050	25000	2900	24000	2800
2NZ3012	26000	3050	25000	2900	24000	2800
2NZ3016	25000	2950	24000	2820	23000	2700
2NZ3020	25000	2950	24000	2820	23000	2700
2NZ4010	22000	3330	21000	3150	20000	3000
2NZ4016	22000	3330	21000	3150	20000	3000
2NZ4020	21000	3300	20000	3000	19000	2870

Max
Milling
Volume

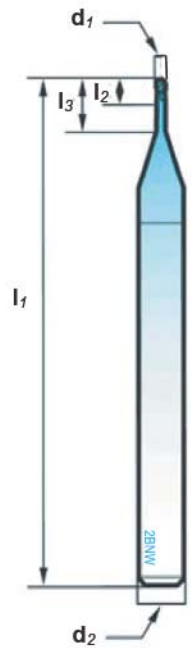


$$l_2 < 0.02R$$



SMG Long Neck Ball Nose End Mills

極細微粒深溝用圓頭銑刀



unit:mm

Order Code.	d ₁	l ₂	l ₃	l ₁	d ₂
型號	直徑	刃長	有效長	全長	柄徑
2BNW0504	R0.25	1	4	50	4
2BNW0506	R0.25	1	6	50	4
2BNW0604	R0.3	1.2	4	50	4
2BNW0606	R0.3	1.2	6	50	4
2BNW0806	R0.4	1.2	6	50	4
2BNW0808	R0.4	1.2	8	50	4
2BNW1006	R0.5	1.5	6	50	4
2BNW1008	R0.5	1.5	8	50	4
2BNW1010	R0.5	1.5	10	50	4
2BNW1012	R0.5	1.5	12	50	4
2BNW1208	R0.6	2	8	50	4
2BNW1212	R0.6	2	12	50	4
2BNW1508	R0.75	2	8	50	4
2BNW1512	R0.75	2	12	50	4
2BNW1516	R0.75	2	16	50	4
2BNW1520	R0.75	2	20	50	4
2BNW1608	R0.8	2.5	8	50	4
2BNW1612	R0.8	2.5	12	50	4
2BNW1616	R0.8	2.5	16	50	4
2BNW2008	R1.0	3	8	50	4
2BNW2012	R1.0	3	12	50	4
2BNW2016	R1.0	3	16	50	4
2BNW2020	R1.0	3	20	60	4
2BNW3008	R1.5	4	8	50	6
2BNW3010	R1.5	4	10	50	6
2BNW3016	R1.5	4	16	50	6
2BNW3020	R1.5	4	20	60	6
2BNW3025	R1.5	4	25	60	6
2BNW4010	R2.0	5	10	75	6
2BNW4015	R2.0	5	15	75	6
2BNW4020	R2.0	5	20	75	6
2BNW4025	R2.0	5	25	75	6
2BNW4030	R2.0	5	30	75	6



2BNW

2NTW

2BCKN

4NT



2BNW Recommendations for Cutting Conditions

WORK Material	S45C.P20S		SKD11.SUS403		Ti-6Al-4V	
	HRC40~50		HRC50~60		HRC50~60	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2BNW0504	17250	1060	16250	1030	15250	1000
2BNW0506	17250	1060	16250	1030	15250	1000
2BNW0604	17250	818	16250	780	15250	750
2BNW0606	17250	818	16250	780	15250	750
2BNW0806	17250	565	16000	530	15000	500
2BNW0808	17250	565	16000	530	15000	500
2BNW1006	17000	680	16000	640	15000	600
2BNW1008	17000	680	16000	640	15000	600
2BNW1010	17000	680	16000	640	15000	600
2BNW1012	17000	680	16000	640	15000	600
2BNW1208	17000	790	16000	750	15000	700
2BNW1212	17000	790	16000	750	15000	700
2BNW1508	17000	850	16000	800	15000	750
2BNW1512	17000	850	16000	800	15000	750
2BNW1516	17000	850	16000	800	15000	750
2BNW1520	17000	850	16000	800	15000	750
2BNW1608	14000	1050	13000	975	12000	900
2BNW1612	14000	1050	13000	975	12000	900
2BNW1616	14000	1050	13000	975	12000	900
2BNW2008	14000	1165	13000	1080	12000	1000
2BNW2012	14000	1165	13000	1080	12000	1000
2BNW2016	14000	1165	13000	1080	12000	1000
2BNW2020	14000	1165	13000	1080	12000	1000
2BNW3008	14000	1455	13000	1350	12000	1750
2BNW3010	14000	1455	13000	1350	12000	1750
2BNW3016	14000	1455	13000	1350	12000	1750
2BNW3020	14000	1455	13000	1350	12000	1750
2BNW3025	14000	1455	13000	1350	12000	1750
2BNW4010	12000	1800	11000	1650	10000	1500
2BNW4015	12000	1800	11000	1650	10000	1500
2BNW4020	12000	1800	11000	1650	10000	1500
2BNW4025	12000	1800	11000	1650	10000	1500
2BNW4030	12000	1800	11000	1650	10000	1500

D : Diameter

XY ≤ 0.01R Z ≤ 0.02R



SMG Long Neck End Mills

極細微粒深溝用立銑刀

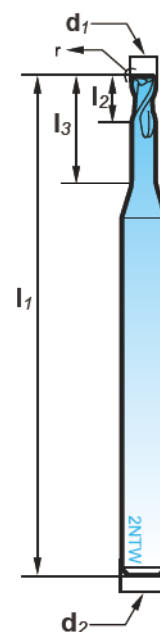


2NTW



unit:mm

Order Code.	d ₁	r	l ₂	l ₃	l ₁	d ₂
型號	直徑	R角	刃長	有效長	全長	柄徑
2NTW1004	1.0	0.1	1.0	4	50	6
2NTW1006	1.0	0.1	1.0	6	50	6
2NTW1010	1.0	0.1	1.0	10	50	6
2NTW1504	1.5	0.1	1.5	4	50	6
2NTW1508	1.5	0.1	1.5	8	50	6
2NTW1510	1.5	0.1	1.5	10	50	6
2NTW1512	1.5	0.1	1.5	12	50	6
2NTW2008	2.0	0.2	2.0	8	50	6
2NTW2010	2.0	0.2	2.0	10	50	6
2NTW2012	2.0	0.2	2.0	12	50	6
2NTW2016	2.0	0.2	2.0	16	50	6
2NTW3008	3.0	0.2	3.0	8	50	6
2NTW3012	3.0	0.2	3.0	12	50	6
2NTW3016	3.0	0.2	3.0	16	50	6
2NTW3020	3.0	0.2	3.0	20	50	6
2NTW4010	4.0	0.2	4.0	10	50	6
2NTW4016	4.0	0.2	4.0	16	50	6



2BNW

2NTW

2BCKN

4NT

2NTW Recommendations for Cutting Conditions

WORK Material	S45C,S50C		SCM.P20.PDS5.PDS3.SKD11		NAK80	
	HB150~250		HRC20~35		HRC35~45	
Order Code	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
2NTW1004	17250	1065	17250	1030	15250	1000
2NTW1006	17250	1065	17250	1030	15250	1000
2NTW1010	17250	1065	17250	1030	15250	1000
2NTW1504	12500	1025	15000	1000	14000	900
2NTW1508	12500	1025	15000	1000	14000	900
2NTW1510	12500	1025	15000	1000	14000	900
2NTW1512	12500	1025	15000	1000	14000	900
2NTW2008	14500	935	14000	900	13500	875
2NTW2010	14500	935	14000	900	13500	875
2NTW2012	14500	935	14000	900	13500	875
2NTW2016	14500	935	14000	900	13500	875
2NTW3008	13000	1525	12500	1450	12000	1400
2NTW3012	13000	1525	12500	1450	12000	1400
2NTW3016	13000	1525	12500	1450	12000	1400
2NTW3020	13000	1525	12500	1450	12000	1400
2NTW4010	11000	1665	10500	1575	10000	1500
2NTW4016	11000	1665	10500	1575	10000	1500

D : Diameter

XY ≤ 0.01 Z ≤ 0.02D



SMG Long Neck Ball Nose End Mills

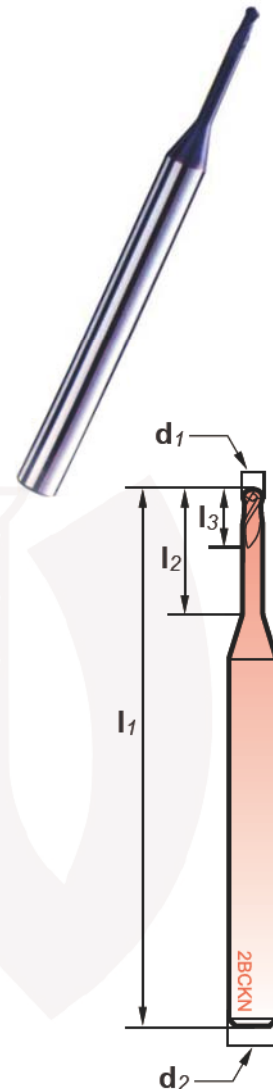
極細微粒銅鋁用深溝用圓頭銑刀

2BCKN



unit:mm

Order Code.	d ₁	l ₂	l ₃	l ₁	d ₂
型號	直徑	刃長	有效長	全長	柄徑
2BCKN1004	R0.5	2	4	50	4
2BCKN1006	R0.5	2	6	50	4
2BCKN1010	R0.5	2	10	50	4
2BCKN1012	R0.5	2	12	50	4
2BCKN1016	R0.5	2	16	50	4
2BCKN1506	R0.75	3	6	50	4
2BCKN1510	R0.75	3	10	50	4
2BCKN1512	R0.75	3	12	50	4
2BCKN1516	R0.75	3	16	50	4
2BCKN2008	R1.0	4	8	50	4
2BCKN2012	R1.0	4	12	50	4
2BCKN2014	R1.0	4	14	50	4
2BCKN2020	R1.0	4	20	50	4
2BCKN3012	R1.5	6	12	50	6
2BCKN3016	R1.5	6	16	50	6
2BCKN3020	R1.5	6	20	50	6
2BCKN3025	R1.5	6	25	50	6



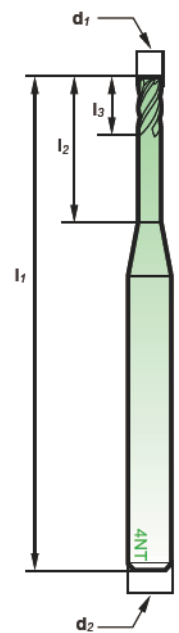
2BCKN Recommendations for Cutting Conditions

WORK Material	Al		Cu-Mg		Mg		Mg-Si		Zn-Mg	
	1070		4032		5052		6061		7075	
Order Code	R.P.M.	Feed	R.P.M.	Feed	R.P.M.	Feed	R.P.M.	Feed	R.P.M.	Feed
2BCKN1004	20000	1000	19000	1800	18000	1500	17890	1300	16750	1240
2BCKN1006	20000	1000	19000	1800	18000	1500	17890	1300	16750	1240
2BCKN1010	20000	1000	19000	1800	18000	1500	17890	1300	16750	1240
2BCKN1012	20000	1000	19000	1800	18000	1500	17890	1300	16750	1240
2BCKN1016	20000	1000	19000	1800	18000	1500	17890	1300	16750	1240
2BCKN1506	16000	2000	15000	1700	14500	1200	13480	1100	12800	1150
2BCKN1510	16000	2000	15000	1700	14500	1200	13480	1100	12800	1150
2BCKN1512	16000	2000	15000	1700	14500	1200	13480	1100	12800	1150
2BCKN1516	16000	2000	15000	1700	14500	1200	13480	1100	12800	1150
2BCKN2008	12000	2500	12000	2000	12500	1880	11500	1870	11100	1790
2BCKN2012	12000	2500	12000	2000	12500	1880	11500	1870	11100	1790
2BCKN2014	12000	2500	12000	2000	12500	1880	11500	1870	11100	1790
2BCKN2020	12000	2500	12000	2000	12500	1880	11500	1870	11100	1790
2BCKN3012	10000	2500	10000	2300	10000	2000	11000	1700	10000	980
2BCKN3016	10000	2500	10000	2300	10000	2000	11000	1700	10000	980
2BCKN3020	10000	2500	10000	2300	10000	2000	11000	1700	10000	980
2BCKN3025	10000	2500	10000	2300	10000	2000	11000	1700	10000	980

D : Diameter XY ≤ 0.01R Z ≤ 0.01R

SMG Long Neck End Mills

極細微粒深溝用立銑刀



unit:mm

Order Code.	d ₁	l ₂	l ₃	l ₁	d ₂
型號	直徑	刃長	有效長	全長	柄徑
4NT1006	1.0	1.5	6	50	4
4NT1008	1.0	1.5	8	50	4
4NT1010	1.0	1.5	10	50	4
4NT1012	1.0	1.5	12	50	4
4NT1508	1.5	2	8	50	4
4NT1510	1.5	2	10	50	4
4NT1512	1.5	2	12	50	4
4NT1516	1.5	2	16	50	4
4NT2008	2.0	3	8	50	4
4NT2010	2.0	3	10	50	4
4NT2012	2.0	3	12	50	4
4NT2016	2.0	3	16	50	4
4NT2020	2.0	3	20	50	4
4NT2510	2.5	3	10	50	4
4NT2512	2.5	3	12	50	4
4NT2516	2.5	3	16	50	4
4NT2520	2.5	3	20	50	4
4NT3010	3.0	4	10	50	6
4NT3012	3.0	4	12	50	6
4NT3016	3.0	4	16	50	6
4NT3020	3.0	4	20	60	6
4NT3025	3.0	4	25	60	6

- 2BNW
- 2NTW
- 2BCKN
- 4NT

4NT Recommendations for Cutting Conditions

WORKMaterial Order Code	S45C,S50C		SCM,P20,SKD11		Ti-6Al-4V	
	HB150~250		HRC20~35		HRC35~45	
	R. P. M.	Feed	R. P. M.	Feed	R. P. M.	Feed
4NT1006	16000	300	24000	1900	24000	1000
4NT1008	16000	300	24000	1900	24000	1000
4NT1010	16000	300	24000	1900	24000	1000
4NT1012	16000	300	24000	1900	24000	1000
4NT1508	12000	300	16000	1300	23000	1100
4NT1510	12000	300	16000	1300	23000	1100
4NT1512	12000	300	16000	1300	23000	1100
4NT1516	12000	300	16000	1300	23000	1100
4NT2008	12000	300	16000	1300	22000	1300
4NT2010	8000	300	12000	900	22000	1300
4NT2012	8000	300	12000	900	22000	1300
4NT2016	8000	300	8000	600	22000	1300
4NT2020	8000	300	8000	550	22000	1300
4NT2510	6600	350	10000	700	21000	1200
4NT2512	6600	350	8000	500	21000	1200
4NT2516	6600	350	5000	300	21000	1200
4NT2520	6600	350	4000	300	21000	1200
4NT3010	5600	350	8000	580	20000	1000
4NT3012	5600	350	8000	580	20000	1000
4NT3016	5600	350	5500	350	20000	1000
4NT3020	5600	350	4000	250	20000	1000
4NT3025	5600	350	3200	210	20000	1000

D : Diameter XY ≤ 0.01D Z ≤ 0.01D



- 2BNW
- 2NTW
- 2BCKN
- 4NT

